



ENERGY POLICY URUGUAY 2030 AND CLIMATE CHANGE

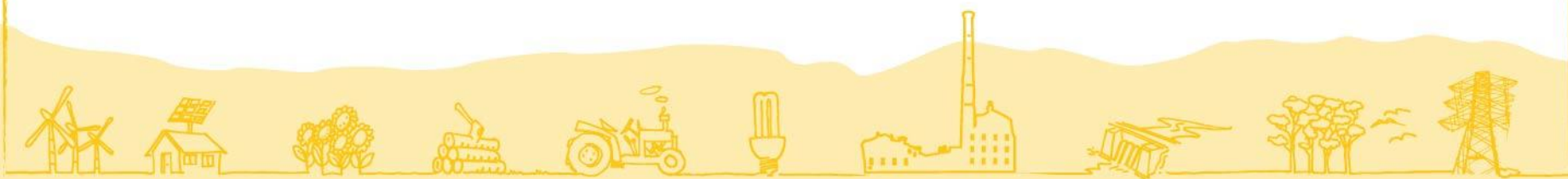
Ramón Méndez
Director Nacional de Energía
URUGUAY

September 2014



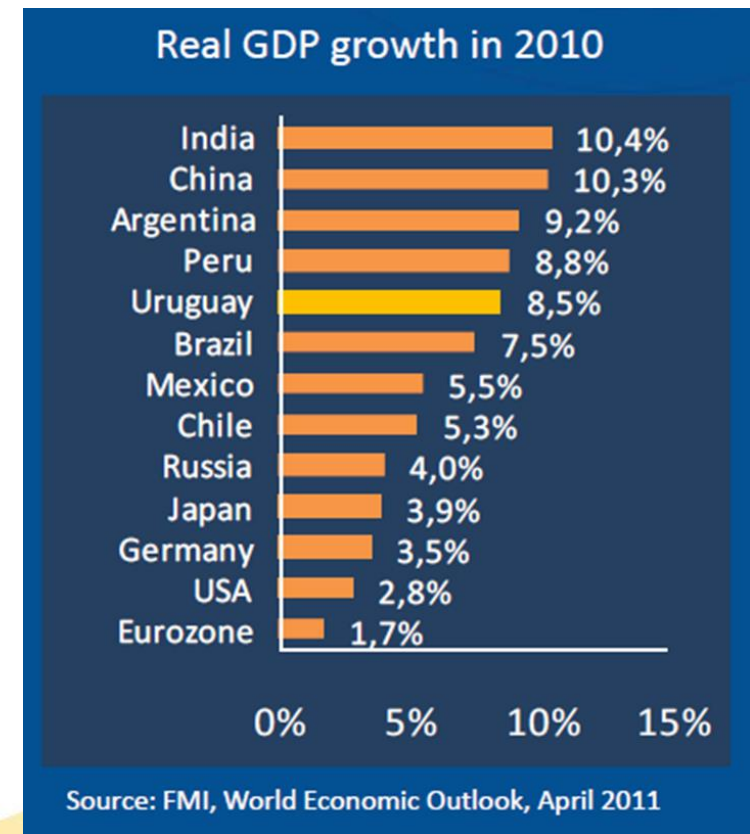
URUGUAY

The last ten years



URUGUAY: A STRONGLY GROWING COUNTRY

- Uruguay's economy has grown annually at 5.8% (average) last 10 years
- GDP per capita is now the second in Latin America: 15,500 US\$
- Highest FDI/GDP ratio in LAC
- Poverty has been reduced by 70% in last 9 years (today:11%)



SOCIALLY SUSTAINABLE

Low Corruption (Transparency International 2010)

New Zealand	1
Norway	10
Ireland	14
Chile	21
US	22
Uruguay	24
France	25
Spain	30
Portugal	32
South Korea	39
Costa Rica	41
South Africa	54
Italy	67
Brazil	69
Colombia	78
Argentina	105

Democracy Index (Economist Intelligence Unit 2010)

Norway	1
New Zealand	5
Ireland	12
US	17
Spain	18
South Korea	20
Uruguay	21
Costa Rica	24
Portugal	26
Italy	29
South Africa	30
France	31
Chile	34
Brazil	47
Argentina	51
Colombia	57

Global Peace Index (ranking)

New Zealand	1
Ireland	6
Uruguay	24
Spain	25
Chile	28
Italy	40
Argentina	71
Brazil	83
US	85

Source: Economist Intelligence Unit 2010

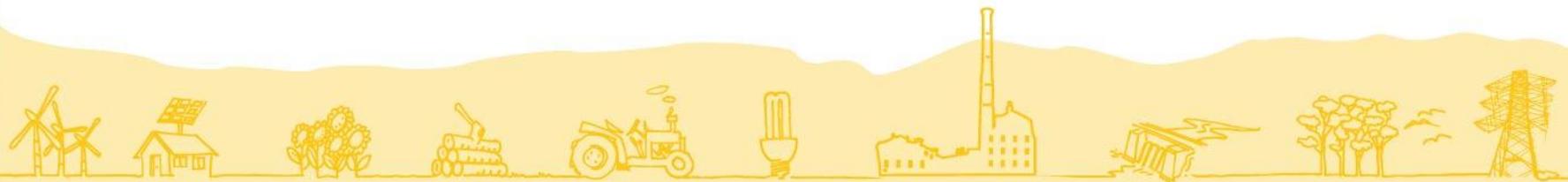


EDUCATIONALLY SUSTAINABLE

“One laptop per child” program



Only country in world to meet goal of **full countrywide coverage of school-age children and teachers**



THE ENERGY SECTOR IN A STRONGLY GROWING COUNTRY

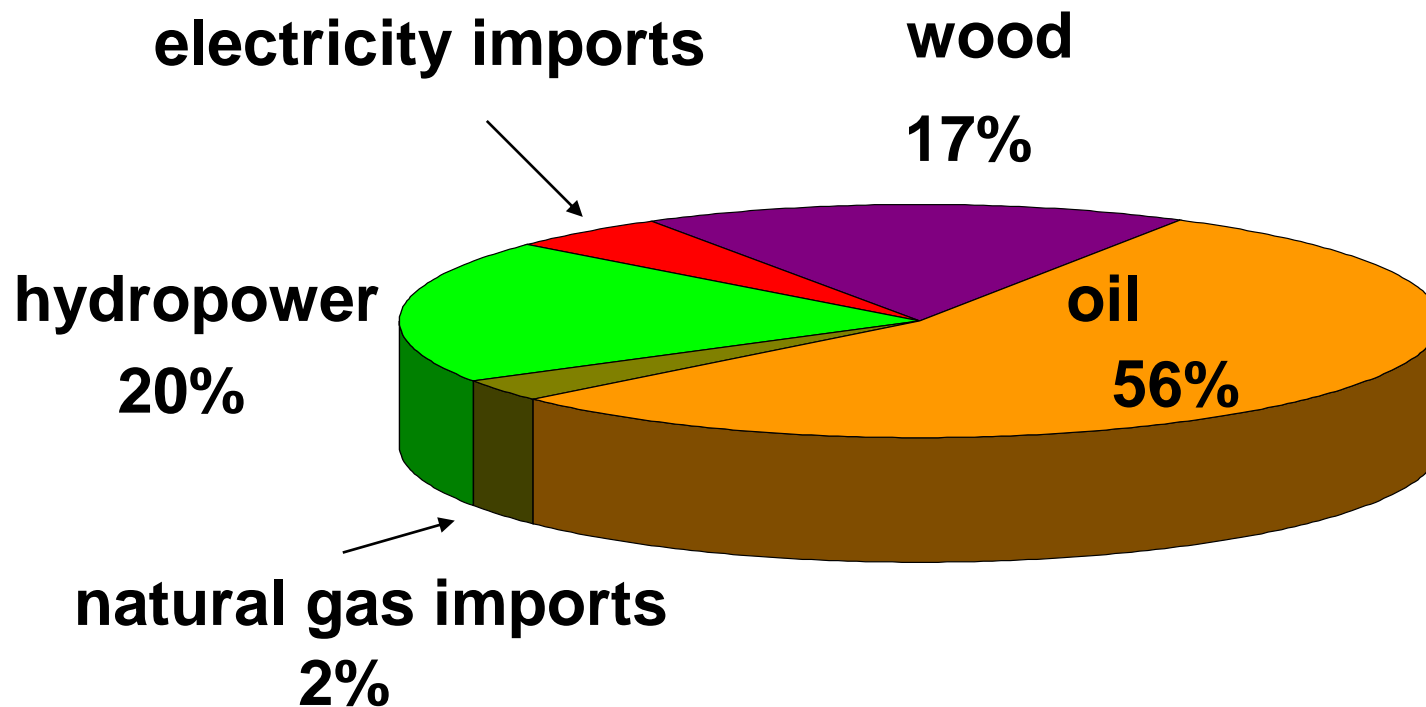


FRAMEWORK AND HISTORICAL BACKGROUND

- Uruguay has no proven reserves of oil, natural gas or coal
- Almost no space for new large hydropower plants (45% - 85 % of present electric mix)
- Strongly dependent on “El Niño” events
- No access to natural gas (only one provider)
- High dependence on imported oil, representing up to **27% of total imports** of Uruguay



PRIMARY GLOBAL ENERGY MIX (2001-2006)



DRAMATIC CHANGES IN RECENT YEARS



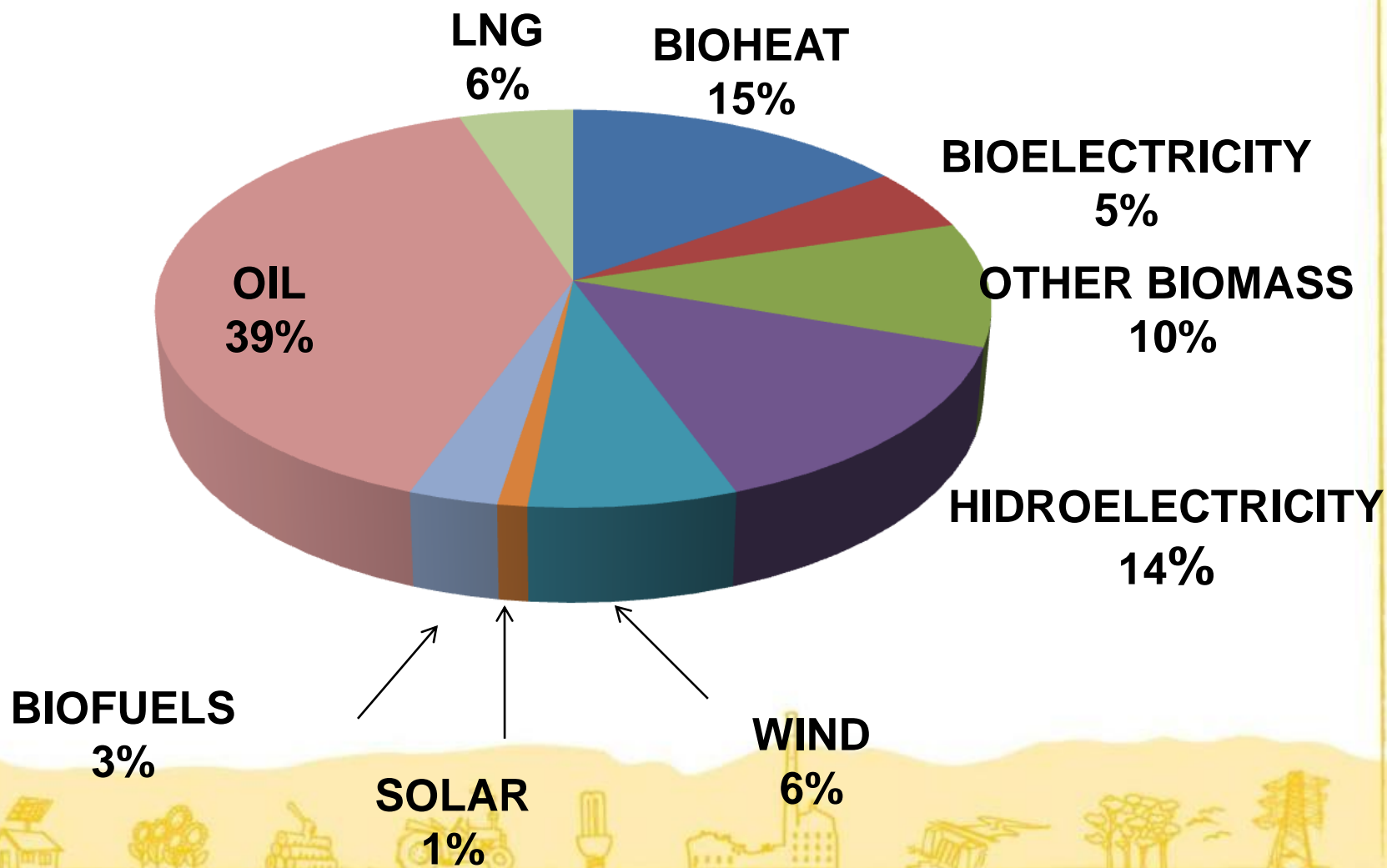


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GLOBAL PRIMARY MIX 2015



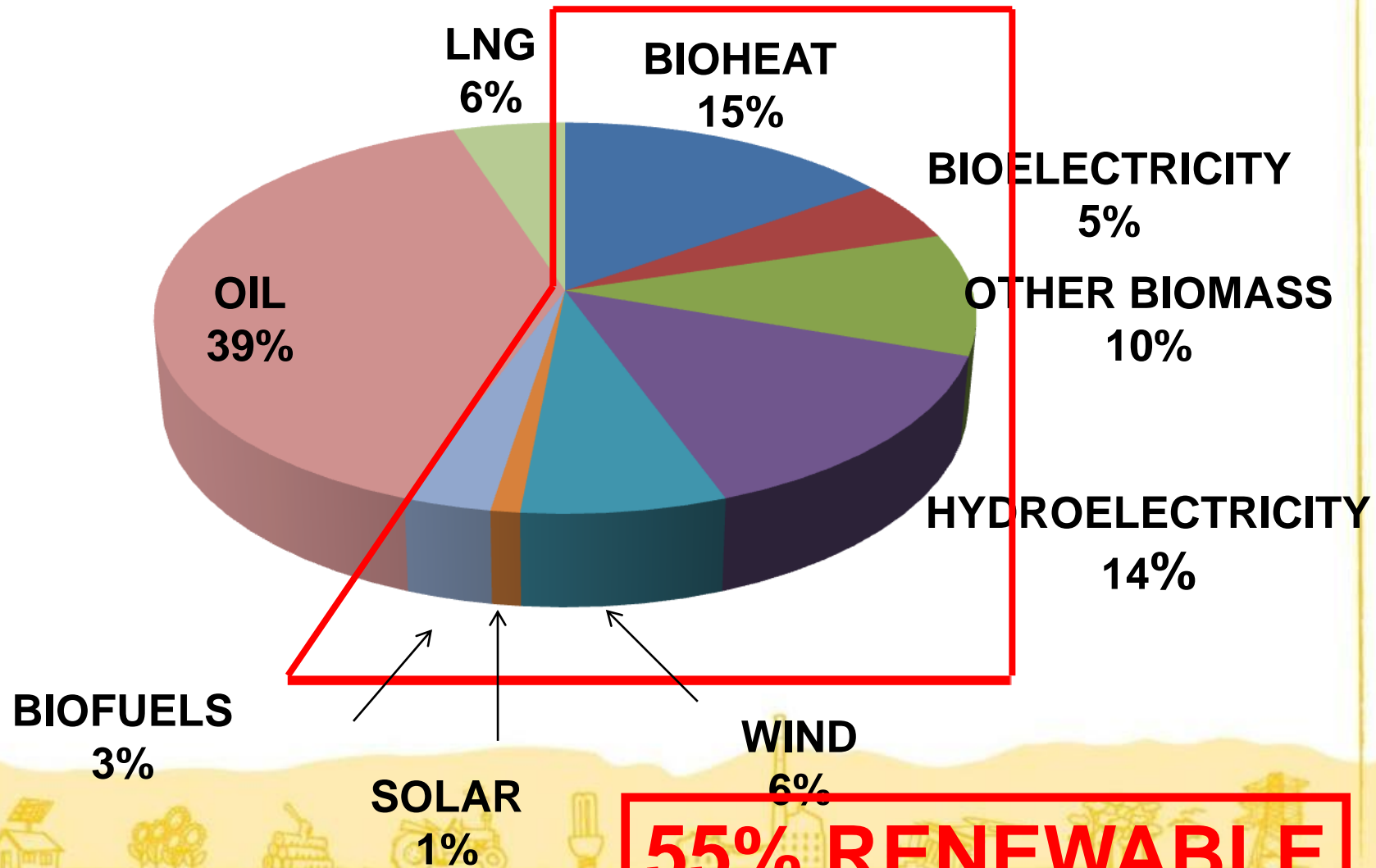


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GLOBAL PRIMARY MIX 2015



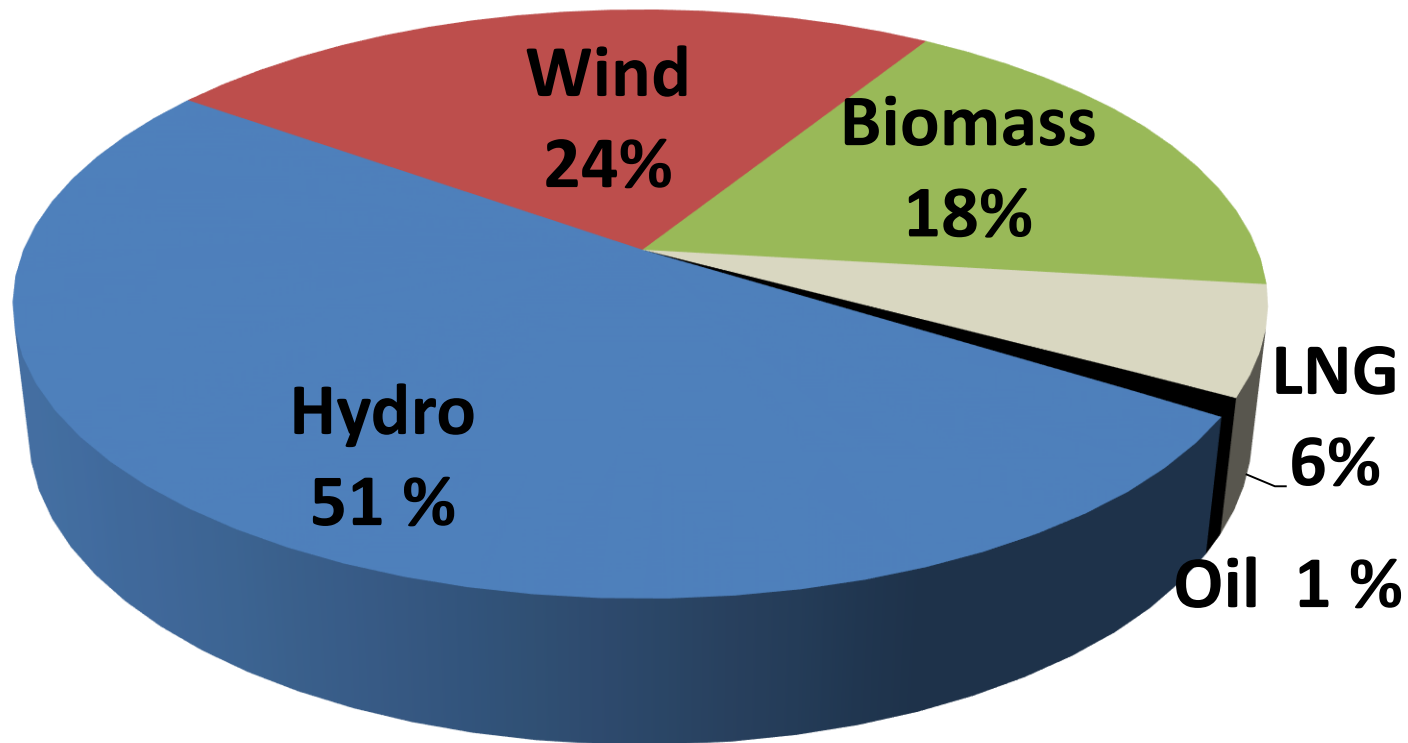


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ELECTRIC MIX IN 2015



93% RENEWABLE





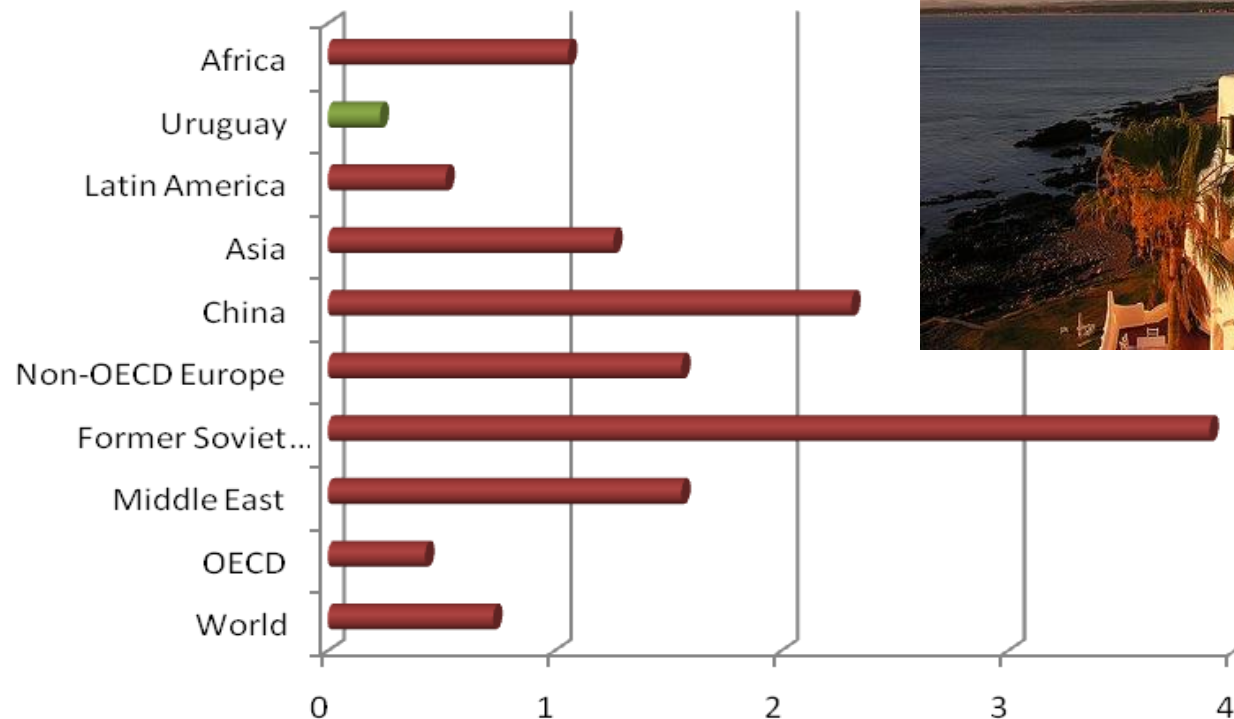
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VERY LOW GHG EMISSIONS

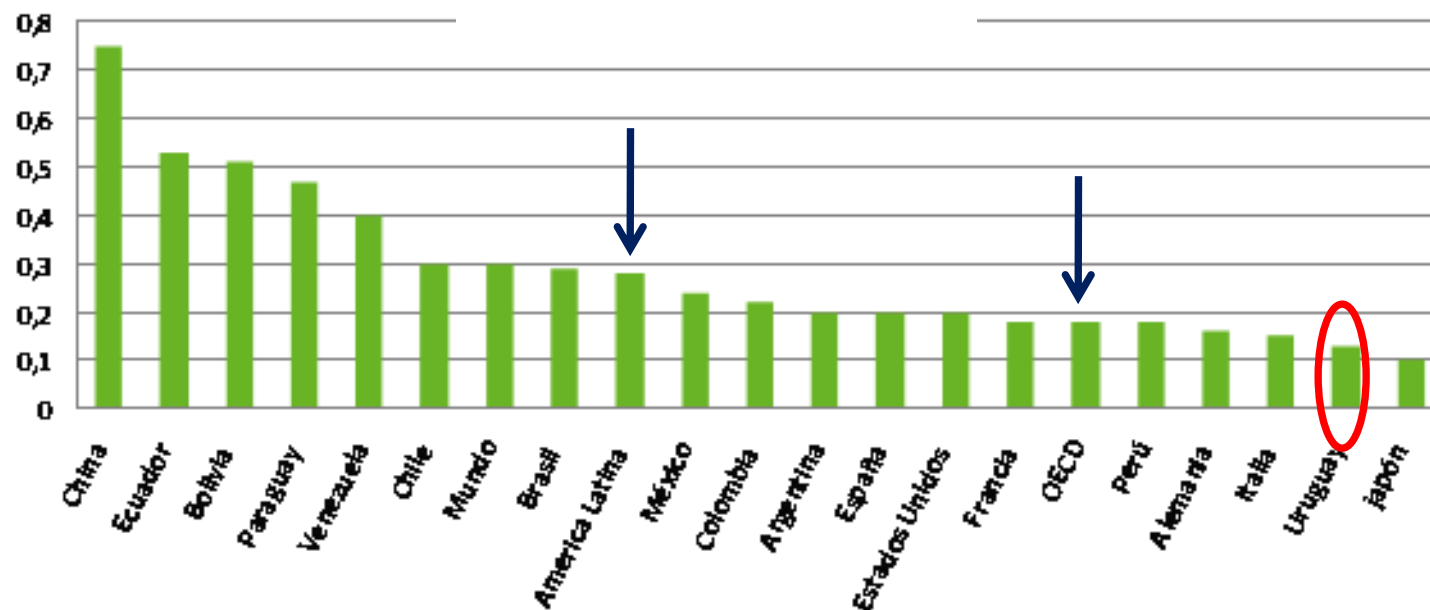
CO₂/GDP
(Kg CO₂/2000 US\$)



Source: IEA

VERY LOW ENERGY INTENSITY

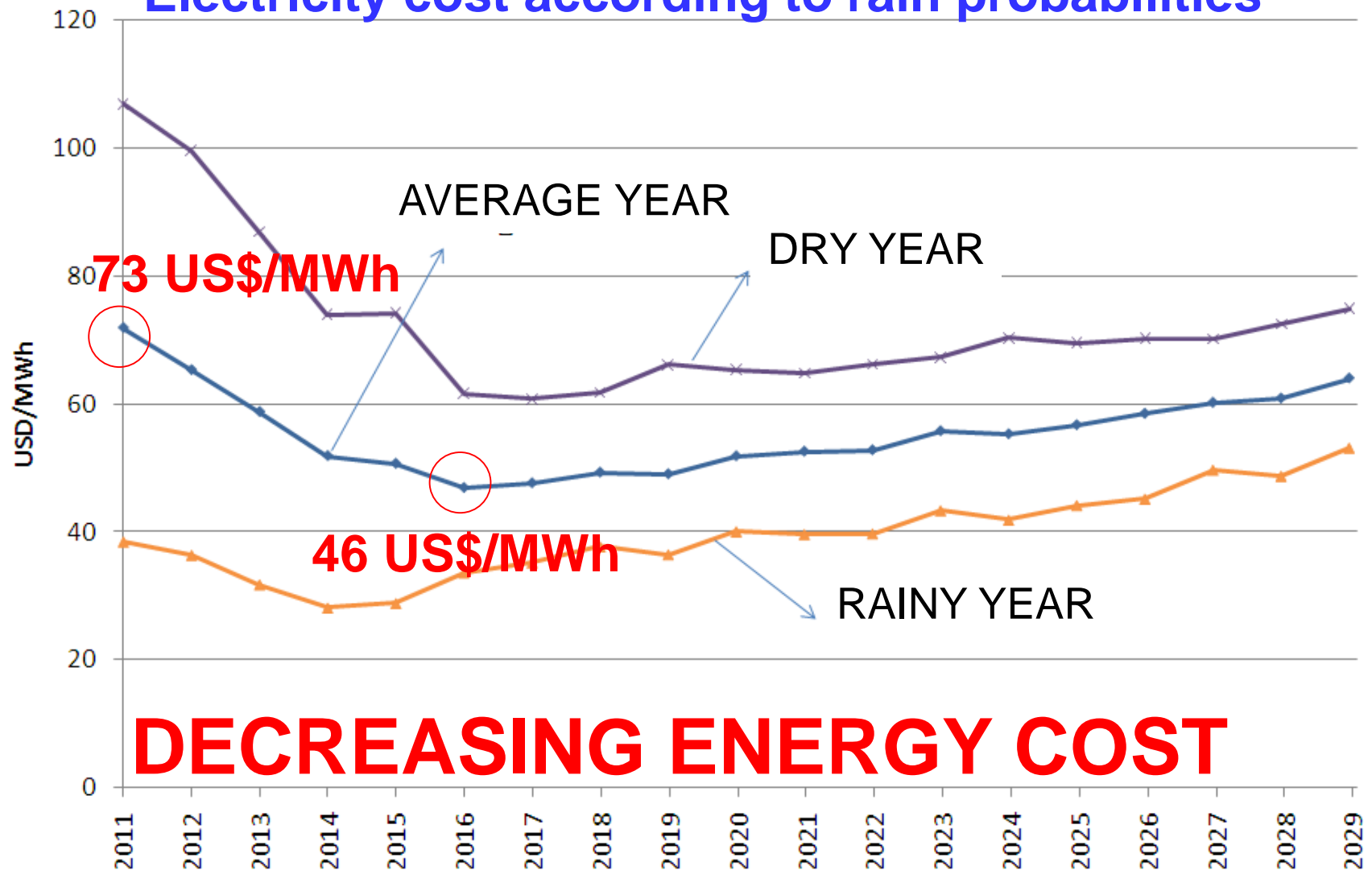
ENERGY/GDP (koe/US\$)



Fuente: Key World Energy Statistics - International Energy Agency



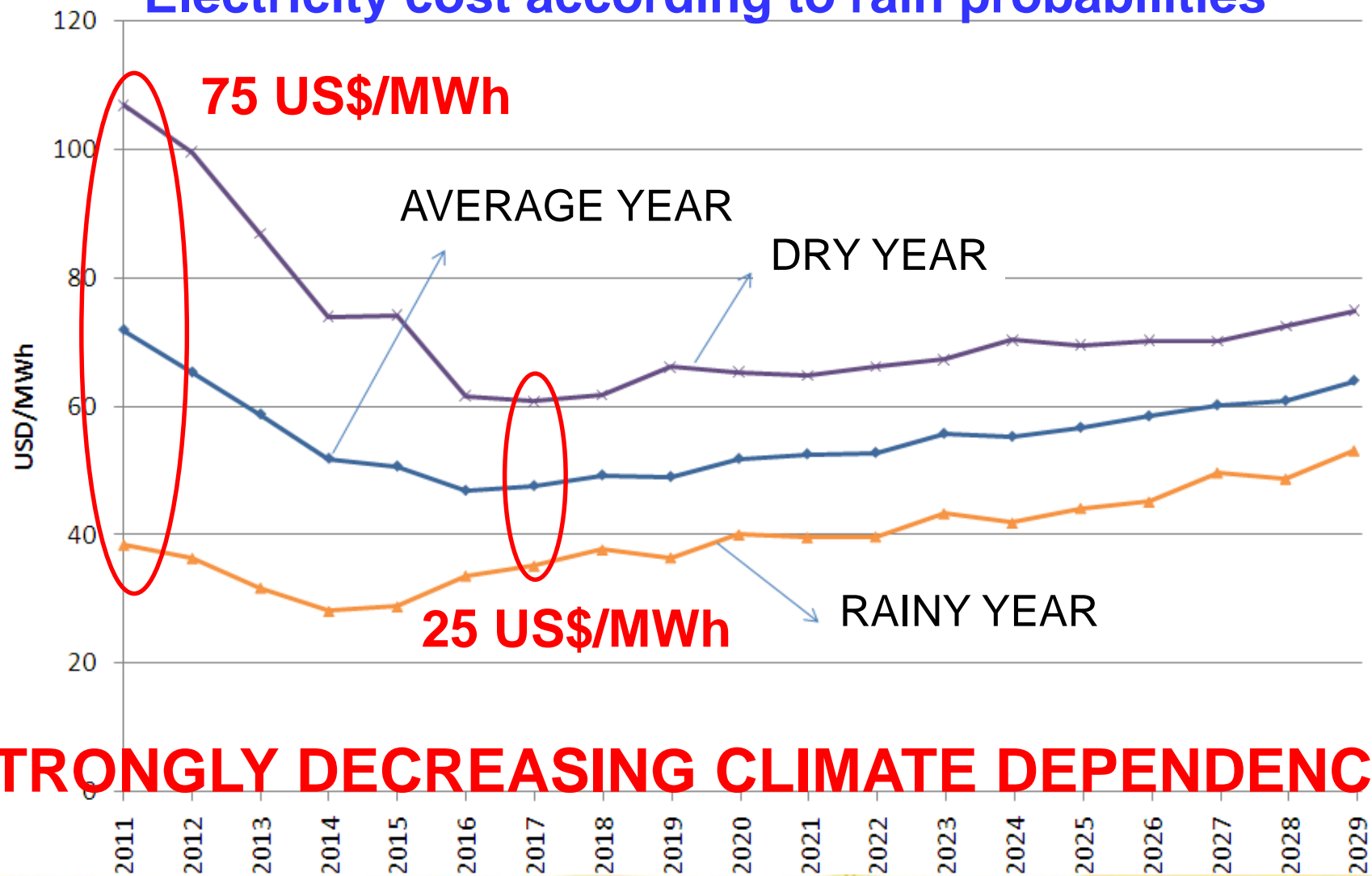
Electricity cost according to rain probabilities



DECREASING ENERGY COST



Electricity cost according to rain probabilities



STRONGLY DECREASING CLIMATE DEPENDENCY



INVESTMENTS (2010-2015)

7.1 billion dollars

- 2.4 billion public sector
- 4.7 billion public-private partnership

3% of GDP per year (5 times Latin American average)





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HOW COULD WE DO THIS?



- We defined a long term energy policy (25 years)
- The policy was approved by all political parties
- We defined an adequate institutional and regulatory framework
- We build win-win ad-hoc opportunities for Private Public Partnerships

Strong public participation is not in contradiction with private participation



Energy supply

90% of world energy mix comes from finite sources

Energy sector is responsible for 75% of human GHG emissions

Energy

independence

1.4 billion people have no access to modern energy

Positive impact on
domestic economy

There are 500 billion dollar subsidies worldwide per year

Sustainability: supply, environmental, social, economical

Long term sustainability?



Sustainability: supply, environmental, social, economical





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Energy supply

Low cost

Energy
independence

Positive impact on
domestic economy

Sustainability: supply, environmental, social, economical





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ENERGY POLICY URUGUAY 2030

Multidimensional and integrated vision, including technological, economic, geopolitical, environmental, ethical, cultural and social issues



2008: Council of Ministers

(previous administration)

2010: Special Committee including
all Political Parties in Parliament

- Four “Strategic Guidelines”
- Short, medium and long term goals
- More than 40 “working areas”



MAIN ACTIONS

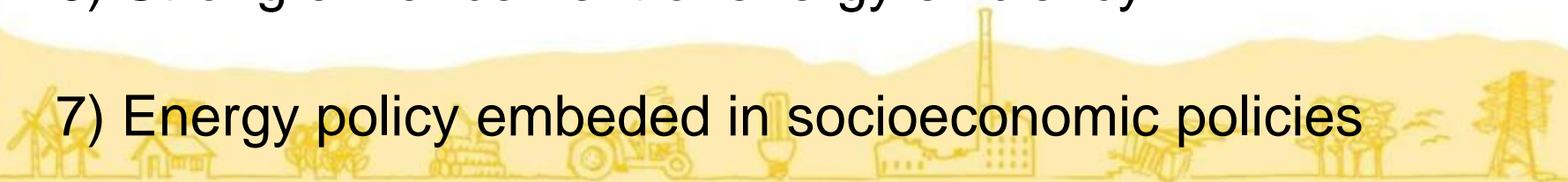


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- 1) Building the appropriate political, institutional and regulatory framework
- 2) Strong support to renewable sources and technologies best adapted to local environment, without subsidies
- 3) LNG regasification terminal
- 4) Domestic oil and gas exploration
- 5) Structural transformation of the electric sector
- 6) Strong enhancement of energy efficiency
- 7) Energy policy embeded in socioeconomic policies





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5) Electric sector structural transformation

- Base: wind, hourly followed by hydro
- Biomass and natural gas fueled combined cycle complementing
- Dramatic redefinition of dispatch rules and grid expansion criteria
- Increase of regional interconnection



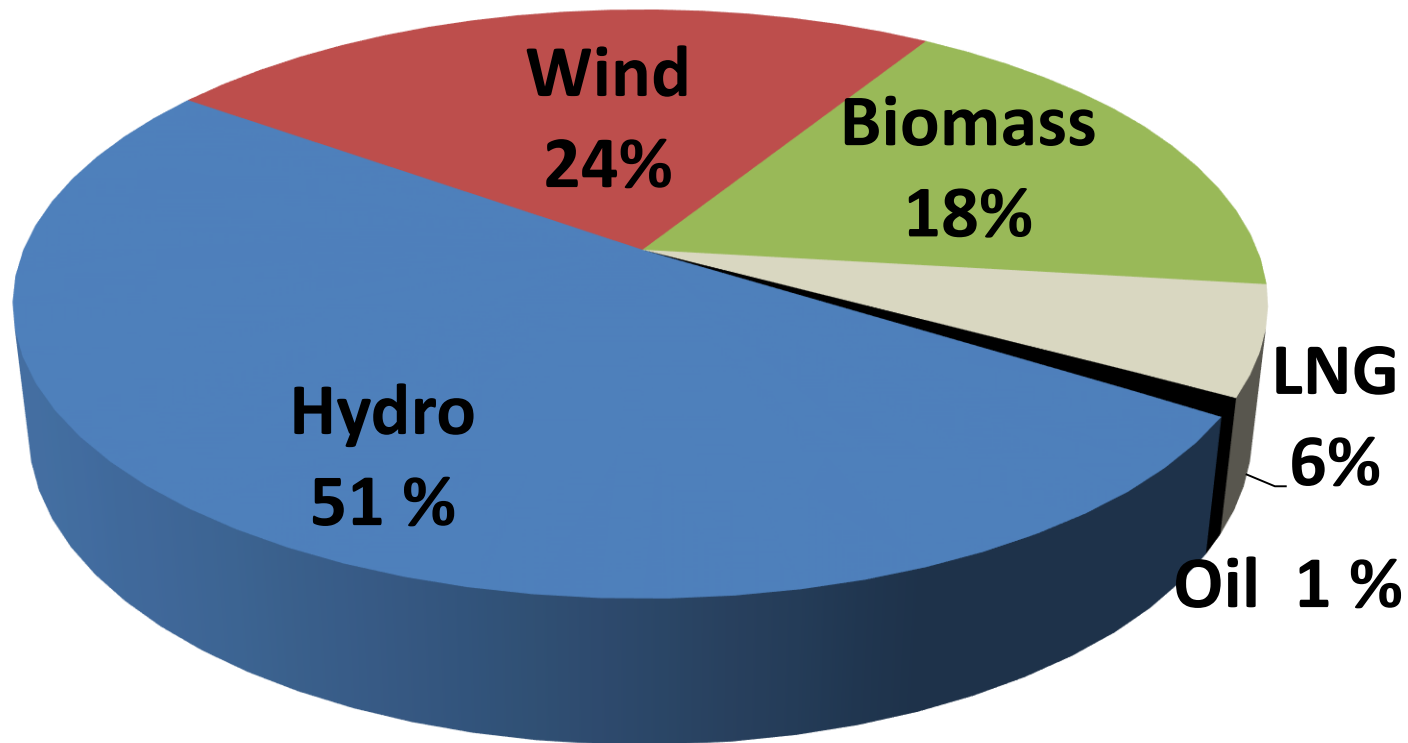


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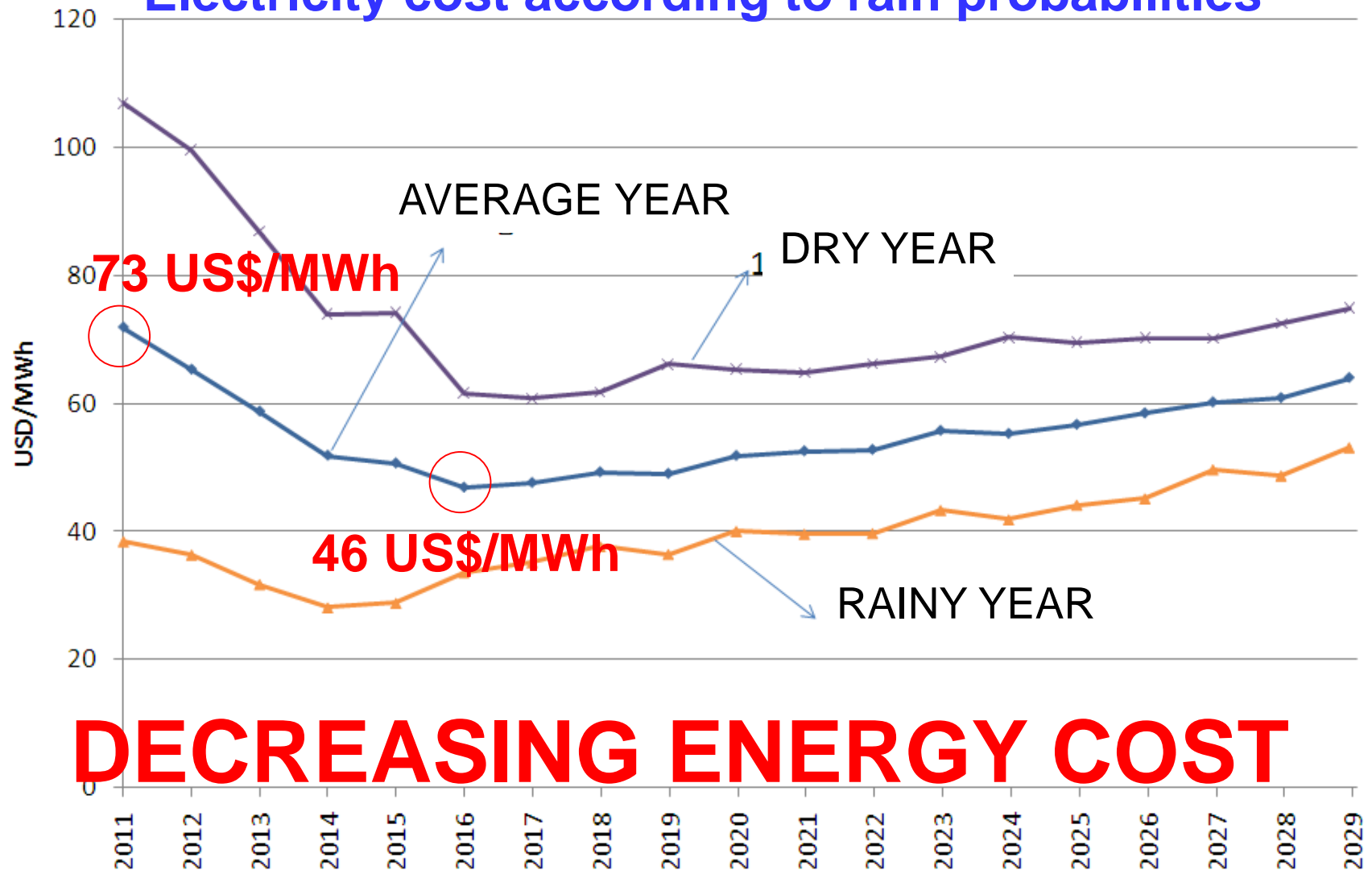


Next 20 years

- Wind farms up to technical operational limit (2014 - 2035)
- Generating and cogenerating power plants using various types of biomass (2014 – 2020)
- Solar Photo Voltaic (2017 – 2035)
- Energy storage capacities (2020 – 2035)
- New natural gas fired combined cycles when needed
- Energy efficiency
- Smarts grids
- Regional integration



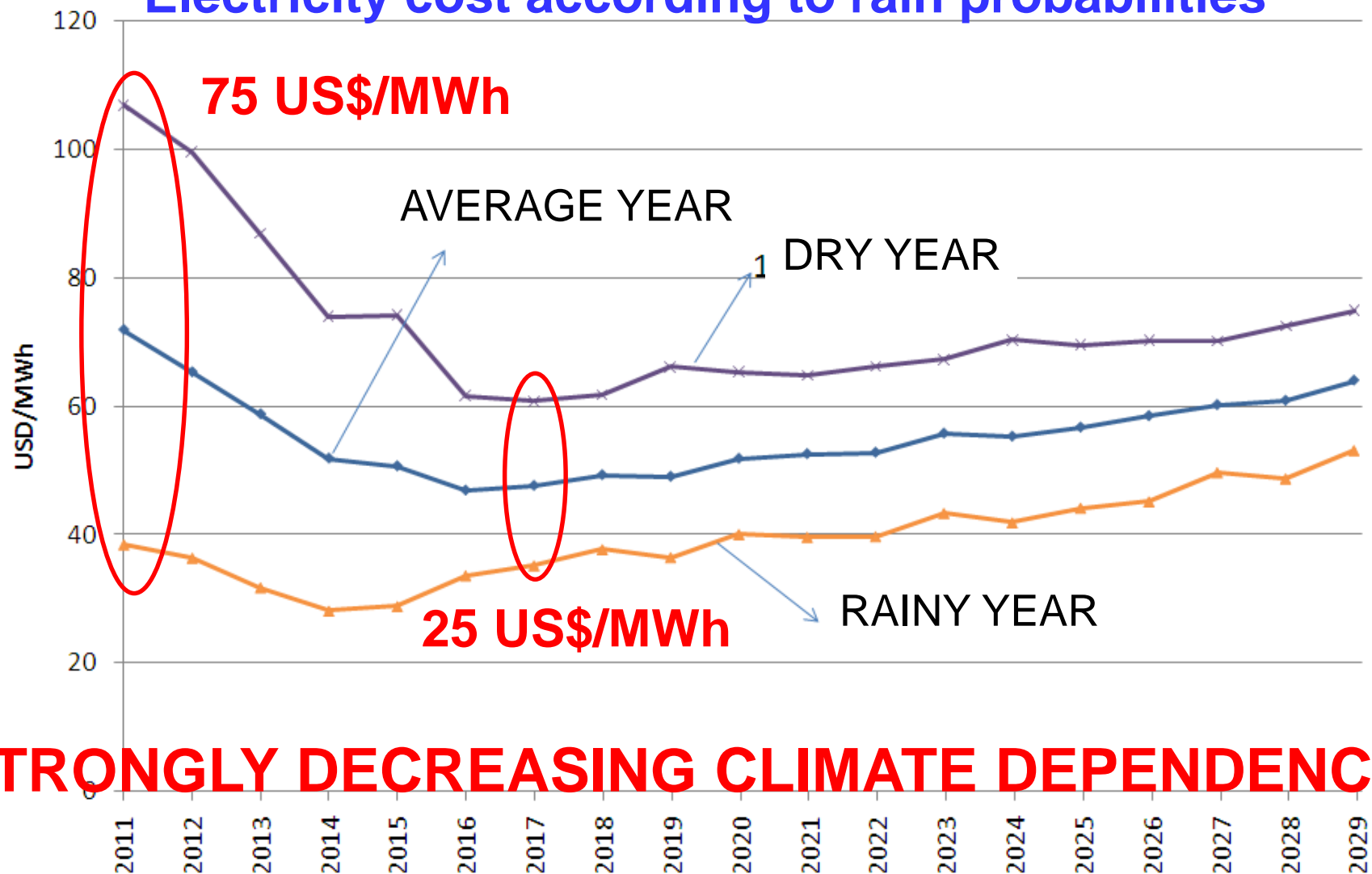
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DECREASING ENERGY COST



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STRONGLY DECREASING CLIMATE DEPENDENCY





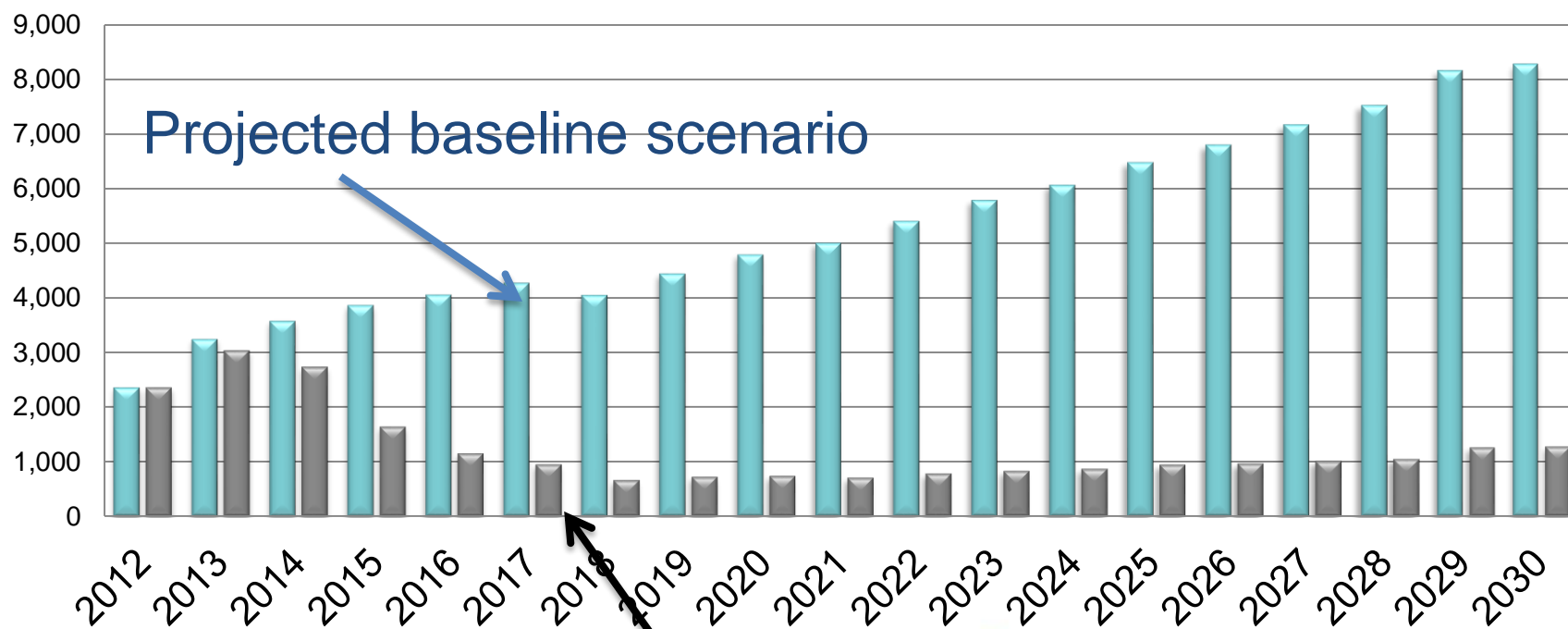
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GHG EMISSIONS REDUCTION in the power sector

Emissions (Gg CO₂)



Policy scenario



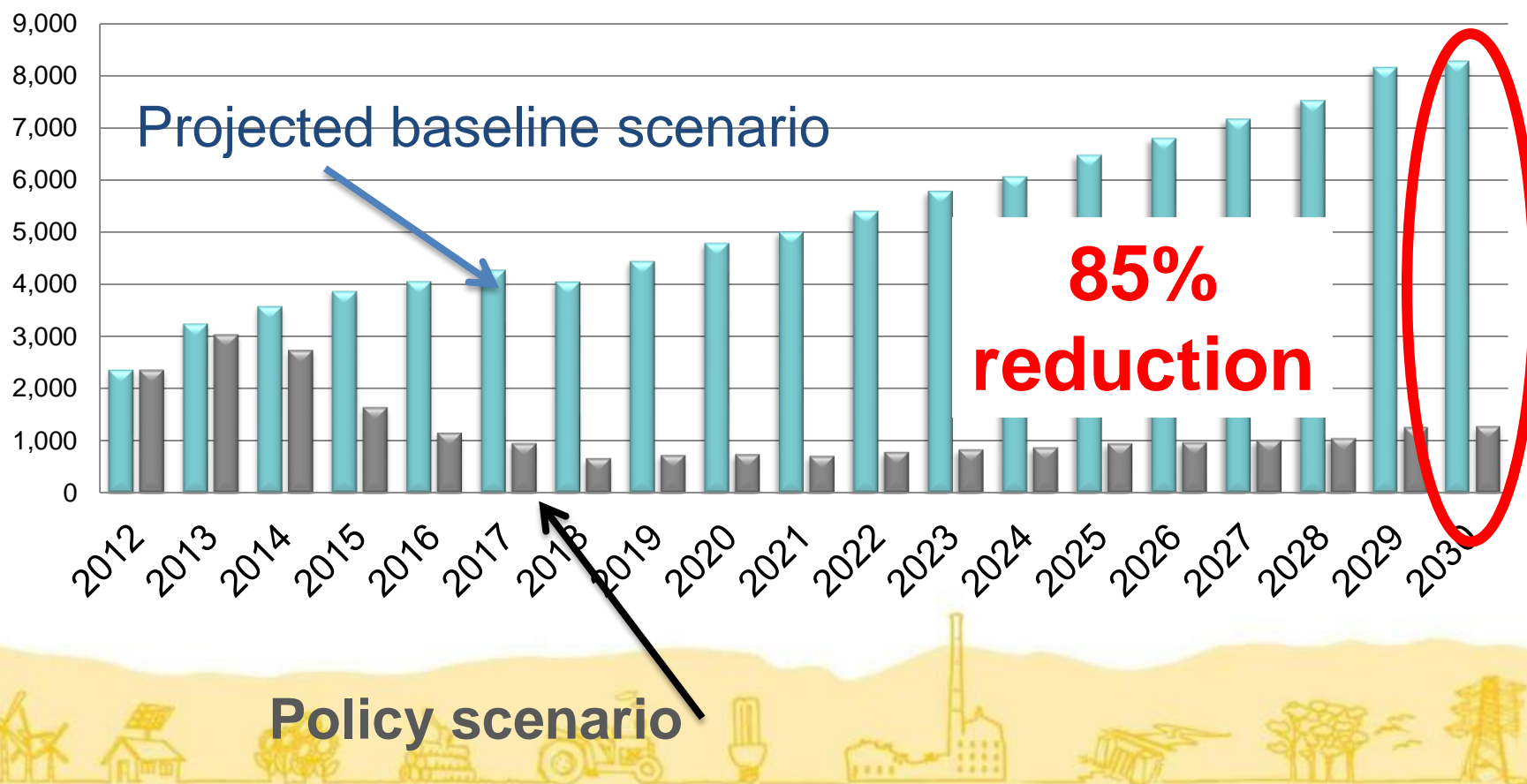
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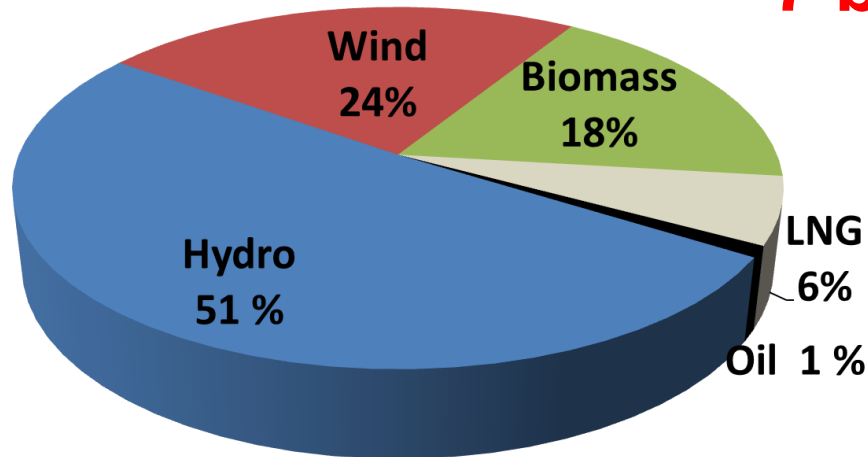
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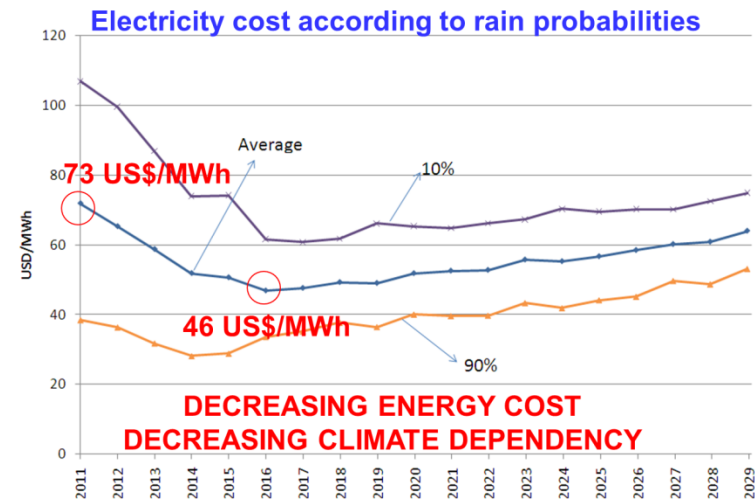
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Thank you!

7 billion dollar investments



93% renewable electricity



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